

BOOK REVIEW.

VELD TYPES OF SOUTH AFRICA. By J. P. H. Acocks. Bot. Surv. of S. Africa, Mem. 28, 1953. Pretoria. pp. v and 192. 5 inset maps and 2 coloured wall maps. 20/-.

The publication of this vegetation map and memoir mark a very definite advance in the study of S. African vegetation. There have been published in the past a considerable number of maps of the vegetation of the Union which have varied greatly in scale and in their degree of accuracy and of detail. The present map stands out from all both on account of its larger scale and hence greater amount of detail demonstrable, and especially on account of the much greater degree of accuracy and knowledge upon which it is based. An inset map shows the journeys made by the author and his points of detailed observation. This map indicates very clearly the completeness of cover that has been attained. Inevitably some parts are more fully covered than others, but it is evident from this map that no part has been omitted and hence that the boundaries shown can be relied upon.

The actual description of the vegetation is based on direct observation of the composition and structure and if the types described are essentially local units they have at least the advantage of not being forced into any preconceived scheme. The veld type as used here is defined as "a unit of vegetation whose range of variation is small enough to permit the whole of it to have the same farming potentialities". Throughout this emphasis on the practical value is kept to the fore. Succession and similar concepts are dealt with but are made subservient to the practical aspect.

In all considerations of vegetation the dynamic angle is prominent. No vegetation is static but is always changing from one cause or another. There is always variation in composition and structure in accordance with detailed local conditions of the habitat. A chart of a small area from one type is reproduced to illustrate this local variability.

In S. Africa profound changes have taken place and are taking place in the vegetation as the result of man's activities especially his mismanagement of the veld. The most far-reaching factor in this is grazing. In any vegetation made up of a number of plants some are eaten in preference to others. As soon as the rate of consumption equals or exceeds the rate of plant growth, change is inevitable. Destructive change of this kind in very general terms results in a reversal of the developmental succession. If it is continued a stage is reached, which is termed the "critical phase", beyond which the plants cannot exercise control and

either erosion or invasion by plants from less favoured habitats or both occur. A generalised inset map shows that almost the whole of the vegetation of the western half of the country has already reached or passed this critical phase. In other words it is open to erosion and replacement by desert or semidesert vegetation.

The vegetation of the Union has been exposed to destructive changes since the advent of a settled population. The author provides three most interesting and instructive coloured inset maps which show first the probable primitive state of the vegetation at about 1,400 A.D., second the existing state, and third what may be expected in a 100 years' time if present trends are allowed to continue.

A comparison of these three maps gives a striking and frightening picture of the spread of arid and even desert conditions from west to east. The picture for the future is indeed depressing but according to the author by no means exaggerated. It is based on the assumption that present practices continue and importantly that the Kalahari region is not opened up to exploitation. Even so it is obvious that unless serious steps are taken the future is bleak in the extreme. Fortunately, it is not inevitable. The author who may be a realist but is far from a pessimist, has provided a further map which shows what might be the result of real scientific management of our veld. This map indicates a remarkable parallelism with that for the primitive state of the vegetation except for the inevitable disappearance of forest. It undoubtedly opens a door for hope for the future but it is a future that can only be attained by real effort and work. The danger from the advancing deserts is real and pressing. It is earnestly to be hoped that this striking series of maps may help to arouse the country to a realisation of the dangers facing it and result in immediate action to combat them.

It is a little disappointing that this most stimulating part of the work is at present dealt with in outline only. Little more than the conclusions are given. The evidence upon which these conclusions are based is promised in a future more detailed memoir. It is very much to be hoped that this fuller account will not be unduly delayed in appearance.

The main part of the memoir is occupied by outline descriptions of the veld types. Seventy of these are recognised and of these a number are subdivided. The types are based primarily on floristic features. Each type has been analysed and estimates made of what is termed 'relative abundance'. This is expressed as a figure which indicates the number of individuals per morgen. It seems to the writer that such figures are not of much value unless modified by relation to the structure of the vegetation itself. In many cases there are references under the veld type to previous descriptions or to published photographs.

It is not possible to deal here with these descriptions of veld types. It is inevitable that the treatment is somewhat unequal, those of agricultural value are obviously more fully treated. Few will agree wholly with either the grouping of the types or with the names applied to them. In the text no reference is made to the position or extent of the different types. For this reference has to be made to the map.

Finally a word on the maps. There are two, covering the western and eastern halves of the country. They are on the scale 1: 1,500,000. They are printed on stiff paper. Each is 28 x 40 inches. On the maps the veld types are shown in clear colours which stand in good contrast to one another so that the boundary lines are readily seen. The printing of the maps is excellent, they are both clear in their purpose and very pleasing in themselves.

There is a short bibliography and a full index to plant names in which valuable species, harmful and poisonous species are specially indicated.

The memoir and maps are priced reasonably at £1, and are obtainable from the Government Printer, Pretoria. Maps and memoir are not sold separately.

It is hoped that this publication will have a wide sale and that its study will be undertaken seriously and that the lessons it inculcates will result in action as soon as possible.

R. S. ADAMSON.